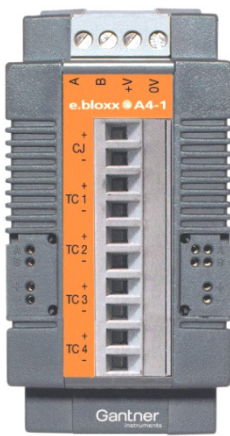


e.bloxx A4TC

Multi-Channel Thermocouple and Voltages



e.bloxx A4-1TC



e.bloxx A4-4TC

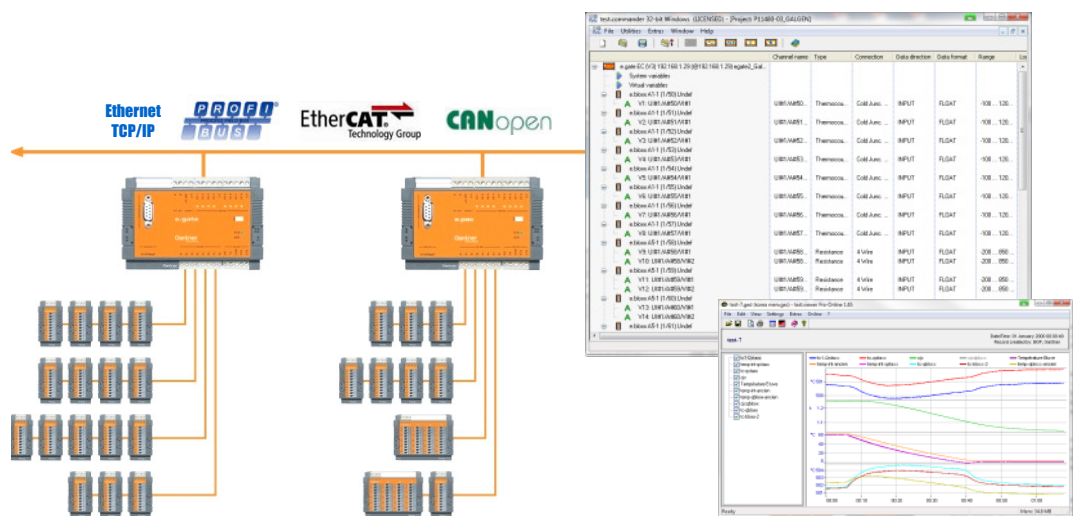
The e.bloxx series is designed for industrial and experimental test systems requiring precise high speed measurement of electrical, thermal, and mechanical quantities in engine and component test beds.

All units are based on a clean modular design, and easily connect to the wide variety of field devices used in today's test beds. Sample rates up to 1000 Hz and resolutions up to 19 bit are possible depending on the module and signal type used. Standardized communication protocols (Profibus-DP and Modbus-RTU) allow the e.bloxx family to work with a wide variety of application hardware and software.

Adding an e.series Test Controller dramatically increases the system's throughput and connectivity options. An e.series Test Controller is a data concentrator, communication gateway, and optionally a Programmable Automation Controller (PAC) with 100Mbps Ethernet, Profibus-DP, EtherCAT, or CANopen.

Most important features:

- **4 or 16 galvanic isolated input channels**
thermocouple and voltages ± 80 mV
- **High accuracy digitalization**
19 bit ADC, 100 Hz sampling rate per channel, total rate 400 Hz
- **Differential inputs**
common mode voltage 100 VDC
- **Cold junction compensation**
CJC per terminal strip (special terminal block required)
- **Dynamic linearization**
optimised positioning of the poles within the range for the types B, E, J, K, L N, R, S, T, U
- **Signal conditioning**
linearization, digital filtering, averaging, scaling, minimum/maximum, arithmetic, alarm
- **RS 485 fieldbus interface**
Profibus-DP, Modbus-RTU, ASCII
as well as connectable to any e.series Test Controller
- **Galvanic isolation**
of I/O-signals, power supply and interface
Isolation voltage 500 VDC
- **Electromagnetic Compatibility**
according EN 61000-4 and EN 55011
- **Power supply 10...30 VDC**
- **DIN rail mounting (EN500022)**



Analog Input

Accuracy	0.01 % typical 0.02 % in controlled environment ¹ 0.05 % in industrial area ²
Repeatability	0.003 % typical (within 24 h)

Measurement	Range	Accuracy	Resolution
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Voltage	±80 mV	±30 µV	0.4 µV
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Thermocouples	incl. cold junction compensation
Type B	better than ±2.5 °C ¹⁾
Type E, J, K, L, T, U	better than ±0.5 °C ¹⁾
Type N	better than ±1 °C ¹⁾
Type R, S	better than ±1.5 °C ¹⁾

¹⁾ with activated mains rejection 50Hz resp. 60 Hz.

Input resistance	> 10 MΩ
Common Mode Voltage	100 V permanent
Linearity deviation	0.01 % of the final value
Signal to noise ration	100 dB
Temperature influence	
on zero point	0.025 K / 10 K
on sensitivity	0.005 % / 10 K
Long-time drift	0.025 K / 24 h 0.06 K / 8000 h
Uncertainty cold junction compensation	0.3 K

Analog/Digital Conversion

Resolution	19 bit
Sample rate	100 samples/sec (4 active channels) 400 samples/sec (1 active channel)
Conversion method	Sigma-Delta
Filter	Variable digital low pass filter 1 st order averaging in addition optional filter for mains rejection 50 Hz/60 Hz

Communication Interface

Standard	RS 485, 2-wire
Data format	8E1
Protocols	ASCII, Modbus-RTU, Profibus-DP Local-Bus
Baud rate	
ASCII and ModBus-RTU	19.2; 38.4; 57.6; 93.75; 115.2 kBaud
Profibus-DP	19.2; 93.75; 187.5; 500; 1500 kBaud
Local-Bus	19.2; 38.4; 57.6; 93.75; 115.2; 187.5; 500; 1500 kBaud
Connectable devices	up to 32
Galvanic isolation	500 V

Power Supply

Power supply	10 to 30 VDC overvoltage and overload protection
Power consumption	
e.bloxx A4-1TC	approx. 1.5 W
e.bloxx A4-4TC	approx. 6 W
Influence of the voltage	0.001 %/V

Mechanical

Case	Aluminium and ABS
Dimensions (W x H x D) and weight	
e.bloxx A4-1TC	45 x 90 x 83 mm, 160 g
e.bloxx A4-4TC	104 x 90 x 83 mm, 500 g
Protective system	IP20
Mounting	DIN EN-Rail

Environmental

Operating temperature	-20 °C to +60 °C
Storage temperature	-40 °C to +85 °C
Relative humidity	5 % to 95 % at 50 °C non condensing

Warm Up Time

All declarations are valid after a warm up time of 45 minutes.



Cold Junction Compensation e.bloxx Terminal CJC

¹ according to EN 61326: 1997, appendix B

² according to EN 61326: 1997, appendix A

Valid from Nov. 2010. Specification subject to change without notice.

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